

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application.

Listing of Claims:

Please amend the claims as follows:

1. (Currently Amended) An optical article of final ~~or nearly final~~ dimensions, comprising silicon oxide, optionally modified by the addition of one or more oxides of elements other than silicon, having ~~an almost~~ complete isotropy and wherein dimensions of said article are equal to or lower than 500 μ m.

2. (Currently Amended and Withdrawn) Process for the preparation of a mould ~~suitable to for the~~ manufacture of an optical article, according to claim 1, comprising ~~one or more of the~~ following operations that, all together, can be continuously carried out as a cascade and/or stopped at the desired or suitable step:

a) preparation of an original high precision mould having an average roughness lower than 20 nm;

b) reproducing, in a ~~silicene~~ silicon rubber ~~or other suitable compound~~, one or more imprints, having the same ~~sizes~~ size and a reversed symmetry with respect to said mould;

c) preparation, by the employment of at least one or more of the products mould obtained in the preceding steps, step a) or imprint obtained in step b) of the optical article having

reduced dimensions and reversed symmetry with respect to the starting mould/imprint; according to a sol-gel procedure in which the sol-gel procedure comprises a preliminary step of filling the mould which is cool with a sol containing a pure silica precursor, gelling the sol to form a gelled sol, drying the gelled sol to form a dried gel, removing the dried gel from the mould, miniaturizing the dried gel to obtain an optical article;

d) preparation, inside the so obtained optical article, of a further article again having reduced sizes and reversed symmetry, or of imprints according to ~~the preceding item~~ step b);

e) repeating the preparation of optical articles by the sol-gel procedures procedure and/or ~~imprints~~ imprint according to b), until the desired ~~dimensions or, the lowest dimensions~~ dimension is achieved[;];

~~f) separation, in relation with any step, of the imprint and/or the article obtained in the very step.~~

3. (Withdrawn) Process for the preparation of a mould according to claim 2 in which the mould of item a) is produced from nickel/phosphorus alloys on aluminum carriers and aluminum alloys.

4. (Currently Amended and Withdrawn) Process for the preparation of the optical article of claim 1 by a process comprising one or more of the following operations that, all

together, can be continuously carried out as a cascade and/or stopped at the desired or suitable step:

a) ~~preparation of an~~ preparing at least one original high precision mould having an average roughness lower than 20 nm;

b) reproducing, in a ~~siliconic~~ silicone rubber or ~~other suitable compound~~, one or more imprints, having the same sizes size and a reversed symmetry with respect to said mould;

c) ~~preparation~~ preparing, by the employment of ~~one or more of the products obtained in the preceding steps~~ an original mould obtained in step a) or an imprint obtained in step b), of the optical article having reduced dimensions and reversed symmetry with respect to the starting mould/imprint; according to a sol-gel procedure;

d) ~~preparation~~ preparing, inside the so obtained optical article, of a further optical article again having reduced sizes and reversed symmetry, or of imprints according to the preceding ~~item~~ step b);

e) repeating the preparation of optical articles by the sol-gel procedures procedure and/or imprints according to b), until the desired miniaturized dimensions or, the lowest dimensions on the ground of the physical limitation of the process is achieved;

f) separation, in relation with any step, of the imprint and/or the optical article obtained, ~~in the very step~~

in which the sol-gel procedure comprises a preliminary step wherein the mould is cool and filled with a sol containing the pure silicon oxide precursors, the sol is gelled, the gel is dried, the gel is removed from the mould and the dried gel is miniaturized.

5. (Withdrawn) Process for the preparation of an optical article according to claim 4 in which the mould is previously submitted to surface treatments by means of appropriate antiadhesive agents.

6.-7. (Cancelled)

8. (New) An optical article of final dimensions comprising pure silicon oxide, optionally modified by the addition of one or more oxides of elements other than silicon, having essentially complete isotropy and dimensions equal to or lower than 500 μm made by a process comprising one or more of the following steps that, all together, can be continuously carried out as a cascade and/or stopped at the desired or suitable step;

a) preparing at least one original high precision mould having an average roughness lower than 20nm;

b) reproducing, in a silicone rubber, one or more imprints, having the same size and a reversed symmetry with respect to said mould;

c) preparing by the employment of one or more of the moulds obtained in step a) or imprint obtained in step b) an optical article having reduced dimensions and reversed symmetry with respect to the starting mould/imprint; according to a sol-gel procedure, in which the sol-gel

procedure comprises a preliminary step of filling said mould in a cool state with a sol containing pure silicon oxide precursors, gelling the sol, drying the sol to form a dried gel, removing the dried gel from the mould and miniaturizing the dried gel to form an optical article,

d) preparing from the so obtained optical article a further optical article again having reduced sizes and reversed symmetry, or of imprints according to step b);

e) repeating the preparation of additional optical articles by sol-gel procedures and/or imprints according to b), each with successively smaller dimensions until a desired miniaturized dimension is achieved.

9. (New) An optical article of final miniaturized dimensions, comprising pure silicon oxide, optionally modified by the addition of one or more oxides of elements other than silicon, having essentially complete isotropy and wherein said optical article has miniaturized dimensions equal to or lower than 500µm.

10. (New) Process for the preparation of a mould for manufacture of a miniaturized pure silica optical article, according to claim 9, comprising the following steps:

a) preparing an original high precision mould having an average roughness lower than 20 nm;

b) reproducing, in a silicone rubber, one or more initial imprints, having the same size and reversed symmetry with respect to said original mould;

c) preparing, by the employment of the original mould obtained in step a) or an imprint obtained in step b), a pure silica optical article having reduced dimensions and reversed symmetry with respect to the original mould or initial imprint, according to a sol-gel procedure in which the sol-gel procedure comprises a preliminary step of filling said mould in a cool state with a sol containing pure silicon oxide precursors, gelling the sol, drying the sol to form a dried gel, removing the dried gel from the mould and miniaturizing the dried gel to obtain a pure silica optical article,

d) preparing a further pure silica optical article again having reduced sizes and reversed symmetry with respect to the pure silica optical article produced in step c), or of an imprint according to the preceding step b);

e) repeating the preparation of pure silica optical articles by sol-gel procedure and/or imprints according to step b) to obtain pure silica optical article of successively reduced dimensions, until the desired miniaturized dimensions is achieved; and

f) separating the imprint of a mould with the desired miniaturized dimensions.

11. (New) Process for the preparation of a mould according to claim 10 in which the mould of item a) is produced from nickel/phosphorus alloys on aluminum carriers and aluminum alloys.

12. (New) Process for the preparation of a pure silica optical article of miniaturized dimensions comprising :

- a) preparing at least one original high precision mould having an average roughness of lower than 20 nm;
- b) reproducing, in a silicone rubber, one or more imprints, having the same size and a reversed symmetry with respect to said original mould;
- c) preparing, by the employment of one or more of the original mould or imprints from step b), of a pure silica optical article having reduced dimensions and reversed symmetry with respect to the original mould or one or more of said imprints; according to a sol-gel procedure in which the sol-gel procedure comprises a preliminary step of filling an original mould which is cool with a sol containing pure silica and hydrolyzed TEOS at a pH of 4, gelling the sol to form a gelled sol within 60 minutes, drying the gelled sol with aerogel in an autoclave to form a dried gel, removing the dried gel from the mould to obtain an optical article,
- d) preparing, using the so obtained optical article, a further optical article again having reduced size and reversed symmetry with respect to the article produced in step c), or of imprints according to the preceding step b);
- e) repeating the preparation of pure silica optical articles by the sol-gel procedure and/or imprints according to b), of reduced dimensions with respect to the article produced in step d), until the desired miniaturized dimensions or, the lowest dimensions on the ground of the physical limitation of the process is achieved;
- f) separating of the imprint and/or the optical article obtained in step e).

13. (New) Process for the preparation of an optical article according to claim 12 in which the original mould is previously submitted to surface treatments by means of appropriate antiadhesive agents.